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# RESEARCH NOTE

CENTRAL STATES FOREST EXPERIMENT STATION
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## 1961 CHARCOAL PRODUCTION IN THE CENTRAL STATES

The rising popularity of outdoor cooking and of charcoal-cooked foods has increased the demand for charcoal in the United States. To help meet this demand, producers in the Central States supplied more than 84,000 tons of charcoal in 1961 (table 1). This is about triple the production of the region in 1956, the last period surveyed.

The Central States industry is concentrated in the oak- and hickory-covered hill country of south-central Missouri (fig. 1). Missouri accounted for more than three-fourths of the region's plants, kilns, and production in 1961.

Missouri production, like that of the region, has about tripled since 1956. Ohio and Kentucky also made production gains. Indiana, though not a producer of commercial charcoal in 1956, had become one by 1961. Illinois production fell off slightly. There were no known commercial charcoal operations in Iowa in 1961.

### Plants and Kilns

Seventy-eight plants produced charcoal in the region during 1961; almost double the number that operated in 1956. They were operated by 75 producers and varied greatly in production. Thirty-seven of the plants each produced less than 500 tons of charcoal. Only nine produced more than 2,500 tons.

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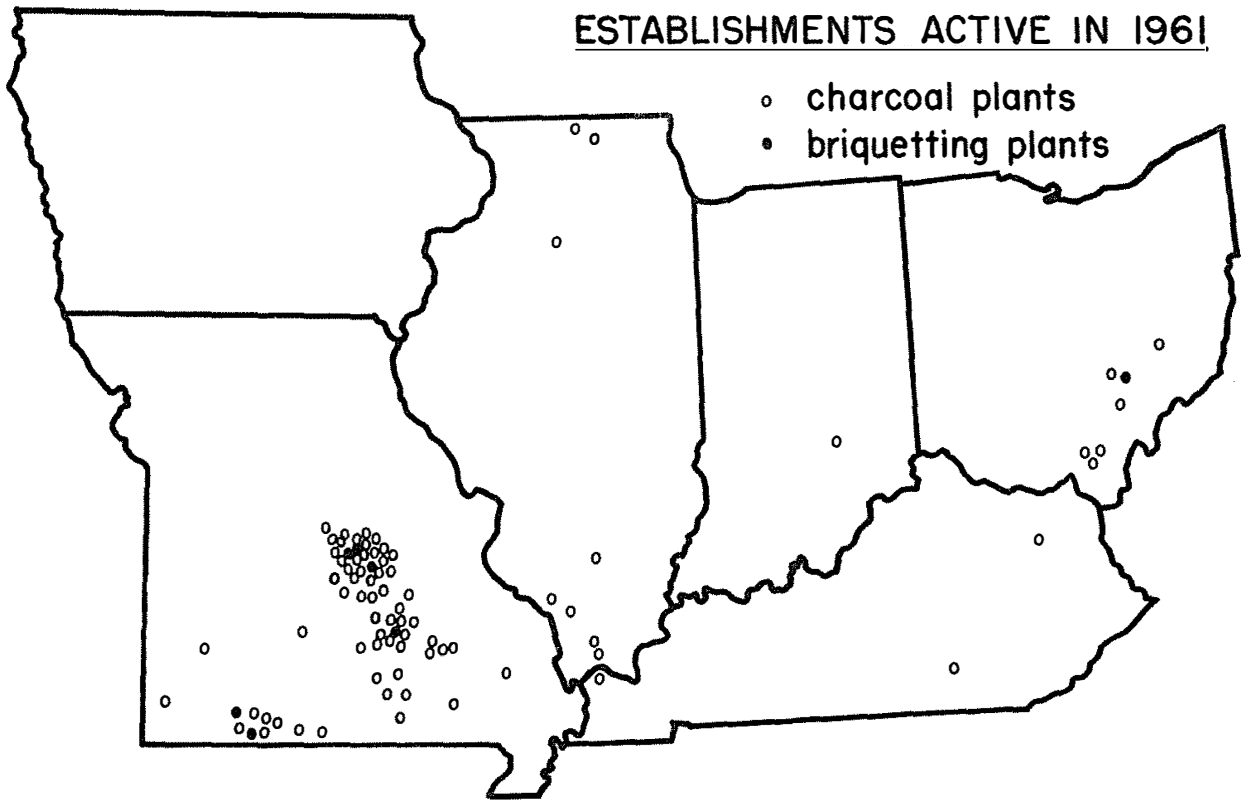
Figure 1.--Location of the charcoal industry in the Central States, 1961.




About 600 kilns were active at the 78 plants. Fifty percent of these were reinforced concrete, 22 percent were steel beehive, and 17 percent were brick. Most of the rest were masonry block. Output of individual kilns per carbonizing cycle ranged from 300 pounds to 30 tons. Most of the region's kilns produce between 15 and 25 tons per charge and require from 2 weeks to a month to complete the cycle. But a few can complete a cycle in less than a day. Had all the charcoal kilns in the region been operated at full capacity on the basis of a 310-day operating year, they would have produced more than 130,000 tons in 1961.

## Briquetting Plants the Major Market for Charcoal

The region's charcoal plants moved practically all of their production into market channels in 1961. Some 67,000 tons, about 80 percent of the total, was sold or transferred to briquetting plants. Only about 12,000 tons, 41 percent of total production, went to this industry in 1956. Dealers who resell to retail outlets provided markets for another

11,000 tons in 1961. Virtually all of the remaining 6,000 tons went to metal industries and other industrial markets.

Charcoal is sold in different ways to fit the needs of various types of users and prices vary accordingly. Most of the 1961 production was sold in bulk, kiln run, and unscreened for an average of $33.40 a ton (f.o.b. the producing plant). Screened lumps in bulk were marketed for $47.50 a ton on the average and bulk fines for $32.80. Bagged charcoal for sale to briquetting plants and industrial users brought about 1 3/4 cents per pound for kiln run, 2 1/2 cents per pound for screened lump, and 1 1/2 cents per pound for fines. Charcoal in bags intended for retail sale sold for an average of 3 cents per pound. Selling prices were generally lower in Missouri than in any of the other Central States.

## Over 190,000 Cords of Wood Used

Approximately 173,000 cords of roundwood and 21,000 cords of sawmill residues such as slabs and edgings were used to produce charcoal in 1961 (table 2). Virtually all the wood was hardwood, primarily oak and hickory. From 2 1/4 to 2 1/2 cords of wood were needed to produce each ton of charcoal. A recent study of Missouri timber utilization indicated that two-thirds of the roundwood used for charcoal is sawlog material or had sawlog potential. The other third of the roundwood used comes from cull and dead trees and limbwood.

Table 1.--Charcoal production by states, 1961

| State | Plants | Production | | | Total | | Change from 1956 |
|---|---|---|---|---|---|---|---|
| | | Kiln run unscreened | Screened lump 1/ | Fines | | | |
| | Number | Tons | Tons | Tons | Tons | Percent | Tons |
| Missouri | 60 | 59,660 | 7,470 | 820 | 67,950 | 80.5 | +47,000 |
| Ohio | 6 | 2,480 | 3,430 | 320 | 6,230 | 7.4 | + 750 |
| Illinois | 8 | 470 | 1,660 | 90 | 2,220 | 2.6 | - 220 |
| Kentucky and Indiana 2/ | 4 | 8,000 | 20 | - | 8,020 | 9.5 | + 7,670 |
| Total | 78 | 70,610 | 12,580 | 1,230 | 84,420 | 100.0 | +55,200 |

1/ Three-fourths inch mesh screened.
2/ Combined to prevent disclosure of production of individual plants.

Table 2.--Wood consumed for charcoal production by states, 1961

| State | Roundwood | | Slabs and edgings | | Total |
|---|---|---|---|---|---|
| | Cords | Average price[1] | Cords | Average price[1] | |
| | Number | Dollars | Number | Dollars | Cords |
| Missouri | 150,920 | 7.05 | 2,990 | 5.69 | 153,910 |
| Ohio | 710 | 6.52 | 13,830 | 6.15 | 14,540 |
| Illinois | 4,830 | 7.30 | 100 | 6.46 | 4,930 |
| Kentucky and Indiana[2] | 16,060 | 7.01 | 4,010 | 5.50 | 20,070 |
| Total | 172,520 | 7.05 | 20,930 | 5.96 | 193,450 |

1/ Delivered at the kilns.
2/ Combined to prevent disclosure of consumption of individual plants.

Ohio's charcoal producers, unlike most in the Central States, depended heavily on the sawmill residues for their wood.

Average costs of charcoal wood in the Central States have changed but slightly since 1956. Roundwood still is purchased for about $7.00 a cord and residues for $6.00 a cord delivered. At these prices, the region's charcoal producers used more than 1.3 million dollars' worth of wood in 1961.

## The Benefits of Expansion

The Central States area is profiting from the expansion of charcoal manufacturing. The charcoal industry provides needed markets for small and low-quality hardwood timber and an outlet for sawmill residues that otherwise would be burned as waste. In addition, most of the industry's growth is occurring in rural areas where aid for the local economy is badly needed. New and expanded charcoal operations are furnishing employment and additional income for charcoal producers, wood cutters, and forest owners.

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